

A NEW *MEMPHIS* FROM THE PANTEPUI, VENEZUELA (LEPIDOPTERA: NYMPHALIDAE: CHARAXINAE)

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ABSTRACT.— *Memphis montesino*, n. sp., is described from the Pantepui highlands of southeastern Venezuela. Its systematic status in relation to allied taxa is discussed.

KEY WORDS: Amazon, *Anaea*, behavior, Bolivia, Canaima, Costa Rica, *Catasticta*, Darien, *Dismorphia*, Ecuador, endemism, forest refuges, Heliconiinae, Ithomiinae, *Memphis montesino* n. sp., Panama, *Pereute*, Peru, premontane forest, Pronophilini, speciation, taxonomy.

This is the first species of the genus *Memphis* Hübner reported as endemic to the Pantepui region (southeastern Venezuela). Brown (1979) recognized the Pantepui as an important centre of endemism based on a wide scale zoogeographical study of the aposematic Ithomiinae and Heliconiinae. Endemism prevalence in this region is considerable among the few genera of diurnal Lepidoptera proper to the cloud forest occurring on the slopes of the tepui, as exemplified by *Catasticta* (Brown, 1932) or recent discoveries of endemic Pronophilini (Viloria and Pyrcz, 1994). However, it is also noticeable, usually at the subspecific level, among the genera of butterflies inhabiting the premontane forests of the Pantepui: *Dismorphia*, *Pereute* (Reissinger, 1970) and several genera of Ithomiinae (Brown, 1979).

Memphis montesino Pyrcz, new sp.

Diagnosis.— Size 76-86mm. A large species and one of the largest within the genus. Most related to *M. phoebe* (Druce), *M. elara* (Godman & Salvin), *M. ambrosia* (Druce) and, what is more marked in females, to *M. laura* (Druce). It can be readily distinguished from *M. elara* and *M. phoebe* by the shape and the width of the subapical/postmedial blue-greenish band of the forewing dorsum, wider than in the latter species, as well as by the lack of the marginal blue band of the hindwing dorsum.

Description.— MALE: Forewing: 35mm. Tailless, forewing tornus slightly falcate. Wing shape exactly as in *M. phoebe*. Dorsum: Forewing ground color blackish, with a navy blue sheen, lighter at the base, entering Cu1; pale greenish-blue patches between the costa and Cu2 form a continuous band, with a regular outer edge and an incised inner edge along the veins, 3-5mm wide; the band is much wider than in *M. elara* and *M. phoebe* and, contrary to the latter species, does not touch the outer margin of the forewing. Hindwing ground color blackish-blue, with a navy blue sheen, lighter at the base and toward the tornus; blue dots in the marginal area, between the veins. Venter: Forewing ground color dark crimson red, same as in *M. laura*, with silver-white scaling pattern same as in *M. elara* or *M. phoebe*, heavier on the apex, with a straight, darker oblique line. Hindwing ground color dark crimson red with silver-white scaling pattern also like *M. elara* and *M. phoebe*; an

oblique darker line broken at vein M1; a whitish spot is noticeable on the costal margin in the medial area.

Male genitalia: Tegumen stout, without any particular features as compared with related species; uncus slightly thinner and smoother on the inner surface than the folded uncus of *M. phoebe*; shape of gnathos very much alike that of the other species of the *M. phoebe* group; valvae about two-tenths longer than the tegumen-uncus length; their shape as well as the position of the prominent, lifted process on the harpe, and the shape of the delicately sclerotized ampulla are more like those structures in *M. lynceus* (Röber), than in the closely related *M. phoebe* or *M. ambrosia*; aedeagus of the dissected specimen was damaged, apparently during preservation in the collection, and could not be examined, nevertheless, the shape of the aedeagus of *M. elara* and related species: *M. prosperina* (Salvin), *M. lynceus* (Röber), *M. gudrun* (Niepelt) and *M. ambrosia* (Druce) shows to be quite homogeneous and featureless, therefore of little taxonomical value.

FEMALE: Forewing: 42mm. Tailed, forewing tornus falcate. Wing shape similar to that of the related species: *M. elara*, *M. phoebe* and *M. laura*, however forewing apex is slightly less acute than in *M. elara*. Dorsum: Forewing ground color black, with a navy blue sheen in the basal area, same as in male; pale, greenish-blue patches between the costa and Cu2 form a continuous band, 5-9mm wide, much wider than in *M. elara* and *M. phoebe*, especially between M2 and Cu2, with a regular outer edge and slightly incised inner edge; contrary to *M. phoebe*, the outer margin of the band is very sharp, does not fade and does not touch the distal margin. Hindwing ground color black with a navy blue sheen, lighter at the base; blue dots in the marginal area, between the veins. Venter: Ground color dark crimson red, same as in male, with silver-white scaling pattern as in *M. elara* and *M. phoebe*; an irregular, oblique line in the medial area; white scaling heavier on the apex. Hindwing ground color dark crimson red; white-silver scaling pattern same as in the two previously mentioned species; an oblique, darker line, broken on vein M1; whitish dots in the marginal area, between the veins.

Immature stages.— Unknown.

Hosts.— Unknown. Nothing is known also about the biology of *M. phoebe*, *M. elara* or *M. laura*.

Distribution.— Pantepui in the southern Canaima National Park and along the boundary between Venezuela and Brazil.

Flight period.— March, October, probably throughout the year.

Types.— *Holotype* ♂: Venezuela, Bolívar State, Canaima National Park



Fig. 1-4. *Memphis montesino* n. sp.: 1) Male, dorsum. 2) Male, venter. 3) Female, dorsum. 4) Female, venter.

Uonkén, 850m, 5 Mar 1966, Angel Pérez.

Allotype ♀: locality and collector as above, 7 Mar 1966, both deposited in the collection of the Instituto de Zoología Agrícola, Universidad Central de Venezuela, Maracay, Venezuela (MIZA).

Paratype male: Venezuela, Bolívar State, 30km. west of Santa Elena de Uairén, Río Surukum, 1000m, Oct 1989, Francisco Romero, collection of the Romero family in Maracay.

Etymology.— This species is dedicated to Mrs. Montesino de Romero.

Remarks.— Only three specimens of this distinctive and magnificent species are known. It is worth emphasizing that the two type specimens remained in the MIZA collection for 26 years, since their capture, until their rediscovery in 1992!

The ultimate systematic status of *M. montesino* might be subject to revision after the immature stages of the three taxa of the apparently monophyletic complex *M. phoebe*, *M. elara*, *M. montesino* are known and compared. It cannot be ruled out, that they will eventually turn out to be subspecies of one widespread species of discontinuous range. Nevertheless, the phenotypes of

these taxa are neatly distinct. Their male genitalia evidence a few differences, especially in the shape of valvae and uncus (however, the lack of sufficient comparison material did not allow me to appreciate the intraspecific variations of their genital structure). The ranges of the three species are unlikely to overlap (*M. elara* — Costa Rica, Panama; *M. phoebe* — Bolivia, Peru, Ecuador) because they share the same preferences for the premontane wet forest habitat between 600 and 1700m (DeVries, 1987; Witt, 1968); therefore, they are well separated by the Darien gap and the Amazon basin lowlands. The above allows me to treat *M. montesino*, *M. phoebe* and *M. elara* as distinct species.

As pointed out by all the consulted authors (DeVries 1987; Witt 1968, Comstock, 1961, Godman and Salvin, 1887-1901), *M. phoebe* and *M. elara* appear to be rare and local species. For instance, at the present time there are no Peruvian specimens of *M. phoebe* in the excellent collections of the Museo de Historia Natural, San Marcos University, in Lima (Lamas, pers. comm.).

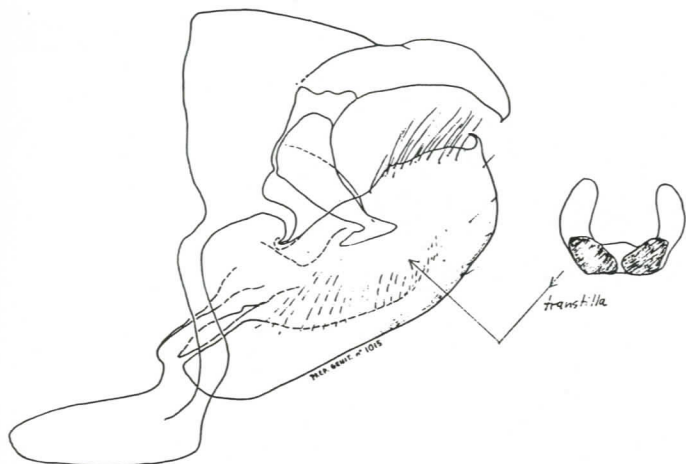


Fig. 5. *Memphis montesino* n. sp., male genitalia (aedeagus excluded) lateral view + transtilla (dorsal view) magnified (genit. prep. no. 1015. J. Wojtusiak).

Memphis montesino seems to be equally rare. Nothing is known about its behavior. The paratype male, taken by Mr. F. Romero, was found on the ground, feeding on urine. I can only quote DeVries (1987), on the related *M. elara* (which I suppose shares similar behaviour) in Costa Rica, who observed "males perching high in the canopy along road cuts and ravines, ... the same perch was maintained by an individual for the entire day. Individuals fly extremely fast, with a short glide followed by a burst of wing flapping."

Druce (1877) wrote that *M. phoebe* is closely allied to *M. ambrosia*, described by himself three years earlier. Druce, of course, did not know *M. elara* at that stage. Druce's opinion was repeated by subsequent authors, Godman and Salvin (1887-1901) and Comstock (1961), who referred to *M. ambrosia* as the Central American counterpart of *M. phoebe*, and finally by D'Abrera (1988), who stated that *M. ambrosia* forms an allopatric pair with *M. phoebe*. Surprisingly, neither of the mentioned authors seemed to notice that, the species most related to *M. phoebe* is *M. elara*, not *M. ambrosia*. Wing shape and color pattern of *M. ambrosia* prove that, although close, it is not directly related to *M. phoebe*, *M. elara* nor *M. montesino*. Comstock's (1961) treatment of *M. elara* was very brief. He did not illustrate its genitalia (and only the valva of *M. ambrosia*). The female of *M. phoebe* was described and illustrated by Witt (1968); therefore, D'Abrera's claim (1988) that he was the first one to figure the female of *M. phoebe* is unjustified.

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